

Society of Chartered Surveyors Ireland
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SOFT LANDINGS:
What it is and what it can do

Bill Bordass

USABLE BUILDINGS
www.usablebuildings.co.uk

BACKGROUND



Thirty years ago: Case studies of allegedly energy-efficient offices reveal performance gaps

Tales of the unexpected

Office buildings claimed to be energy efficient, in reality often fall short of their quoted performance because of simple calculation errors and unknown energy-consuming extras. Matthew Coomber reports.

BUILDING owners beware – your energy-efficient building may not be as efficient as you have been led to believe.

Bill Bordass, an independent energy consultant and something of a guru in the field of energy efficient design, claims many offices are touted as energy efficient, but turn out not to be on closer examination.

He is helping to prepare a series of case studies of energy use in offices as part of the Energy Efficiency Office's Best Practice programme.

The studies detail energy usage and cost figures for each

energy consumption elements missing or had recorded building areas much larger than that actually serviced," he says.

Errors in calculation had arisen either through mismeasurement of floor area or a failure to understand what constitutes the treated area, that is, the area of a building that consumes energy, in whatever form.

"We found that energy researchers have a tendency to look in great detail at where the energy goes, but will often ask somebody else for a building area." Usually rounded up or

Bordass says some people measure energy consumption by the whole building, some by building services only, and some by landlord's building services only. "This can produce great discrepancies when you come to measure the floor area and the devices properly," Bordass notes.

In addition, tenants can be confused about who pays for services, resulting in the doubling-up or omission of important elements of the energy bill.

The next problem concerns the assumptions that the people

Performance gaps are not just for energy: occupant survey of staff, multi-award-winning school

RED: below average; AMBER: Average; GREEN: Above average



“ ... the architecture showed next to no sense. It leaked in the rain and was intolerably hot in sunlight. Pretty perhaps, sustainable maybe, but practical it is not.” ... STUDENT

And of course fire



New non-domestic buildings: *What we found in the Probe studies 1995-2002*

- They often perform much worse than anticipated, *especially for energy and carbon, often for occupants, and with high running costs, and sometimes technical risks.*
- Design intent is not communicated well through the process; Designers and builders run away at handover.
- **Unmanageable complication: the enemy of good performance.**
- Buildings are seldom tuned-up and controls are a muddle. So why are we making things increasingly complicated?
- Modern procurement systems make it difficult to pay attention to critical detail. ***A bad idea when promoting innovation.***
- ***“The English spare no expense to get something on the cheap”.*** ... **NIKOLAUS PEVSNER**

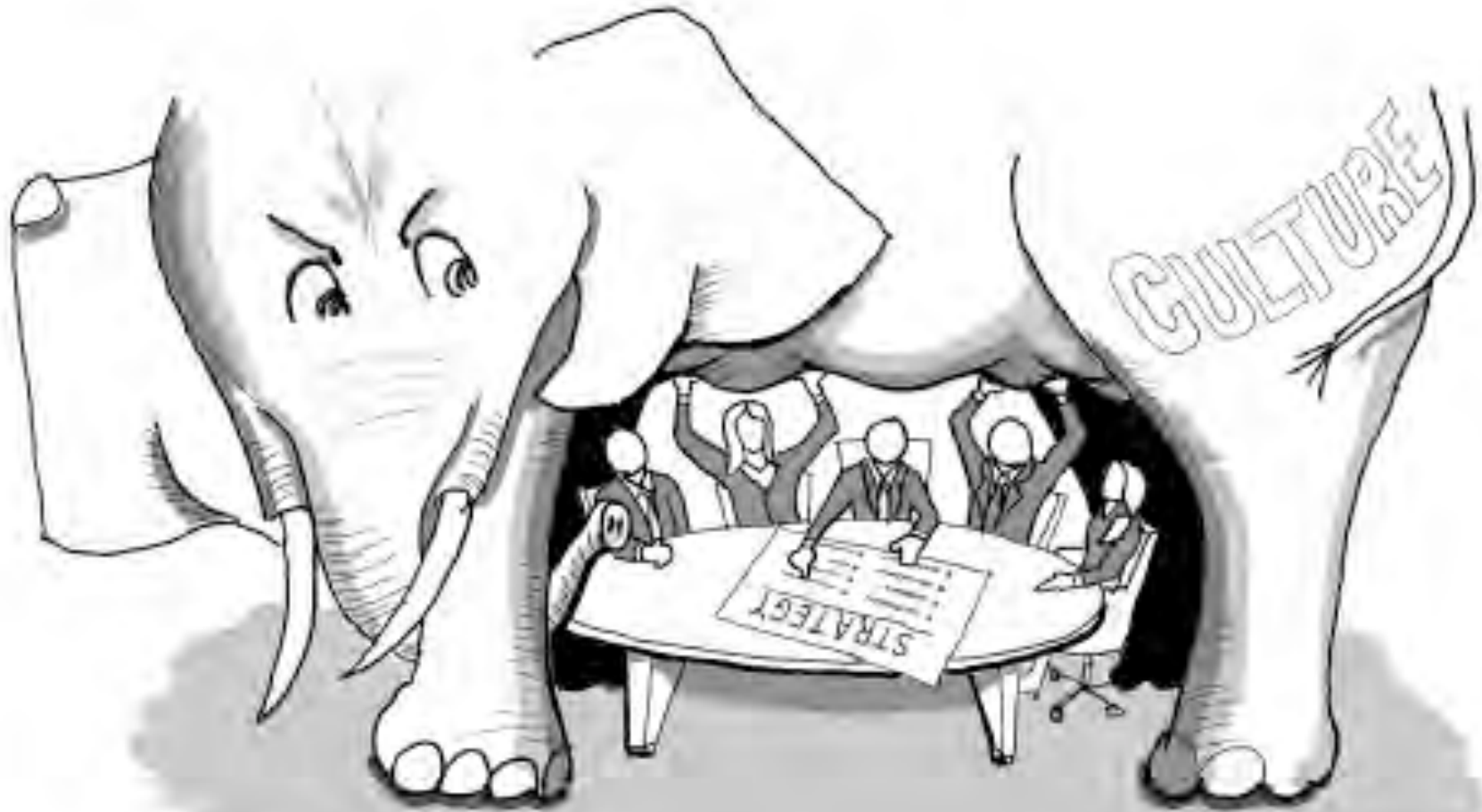


New non-domestic buildings: *What we found in the Probe studies 1995-2002*

- They often perform much worse than anticipated, especially for energy and carbon, often for occupants, and with high running costs, and sometimes technical risks.
- Design intent is not communicated well through the process. **SO ... *Understand how buildings work in use, follow through after handover, and learn from the experience.***
- **Unmanageable complication: the enemy of good performance.**
SO ... *Stop making buildings complicated in the name of sustainability and get the simple things right.*
- Buildings are seldom tuned-up and controls are a muddle. **SO ... *Design to enhance usability and manageability.***
- Modern procurement systems make it difficult to pay attention to critical detail. **SO ... *Change the processes.***
- **AND THEREFORE... *Focus on in-use performance, communicate it clearly and manage it properly.***



The elephant isn't in the room
IT IS THE ROOM!



WE HAVE A SYSTEMIC PROBLEM: Blindness to performance in use
It's not just the construction industry, it's the way we all go about things

HOW TO CHANGE OUR PROCESSES

Stop diverging from good intentions

Converge onto better outcomes

Improving procurement

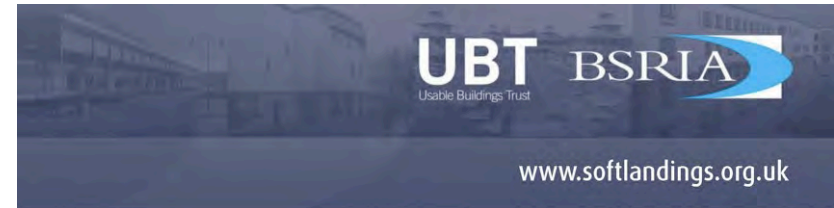
Soft Landings can help teams to start

It can run alongside any procurement system, for any project and helps to:

- Improve briefing
- Link building performance and FM to design.
- Ease transition to occupation.
- Reduce post-handover problems.
- Facilitate monitoring, POE and feedback.
- Capture learning.

It helps design and building teams to:

- Relate design targets to achieved outcomes.
- Manage expectations and review performance at intervals throughout a project, and on into use.
- Allocate responsibilities, *including client responsibilities*.
- Improve relationships with clients and users.



the **SOFT LANDINGS FRAMEWORK**

for better briefing, design, handover and building performance in-use



Soft Landings *can help maintain the “golden thread” from design intent to reality*

It augments the duties of the project team and client representatives), especially:

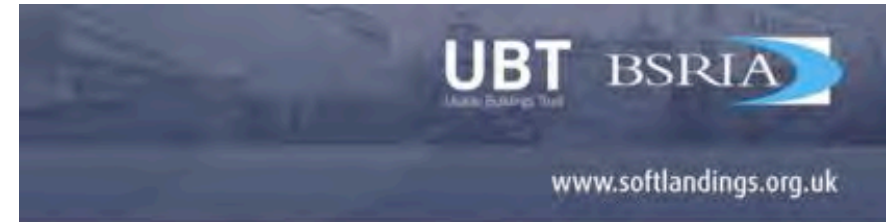
1. During the critical briefing stage.
2. Closer forecasting + reality-checking of predicted performance during design and construction.
3. Greater involvement of users and operators, *or their proxies*, with special attention to pre-handover.
4. Aftercare, with an on-site presence during settling-in.
5. Monitoring and review for the first three years in use.

EACH STAGE HAS A CUSTOMISABLE WORKPLAN

It can run alongside **ANY procurement process**; and

- Create a fast track to improving performance in use.
- Provide more customer focus.
- Improve client relationships and user satisfaction.
- Build recognition that fine tuning is necessary.

BSRIA hosts a UK industry network.

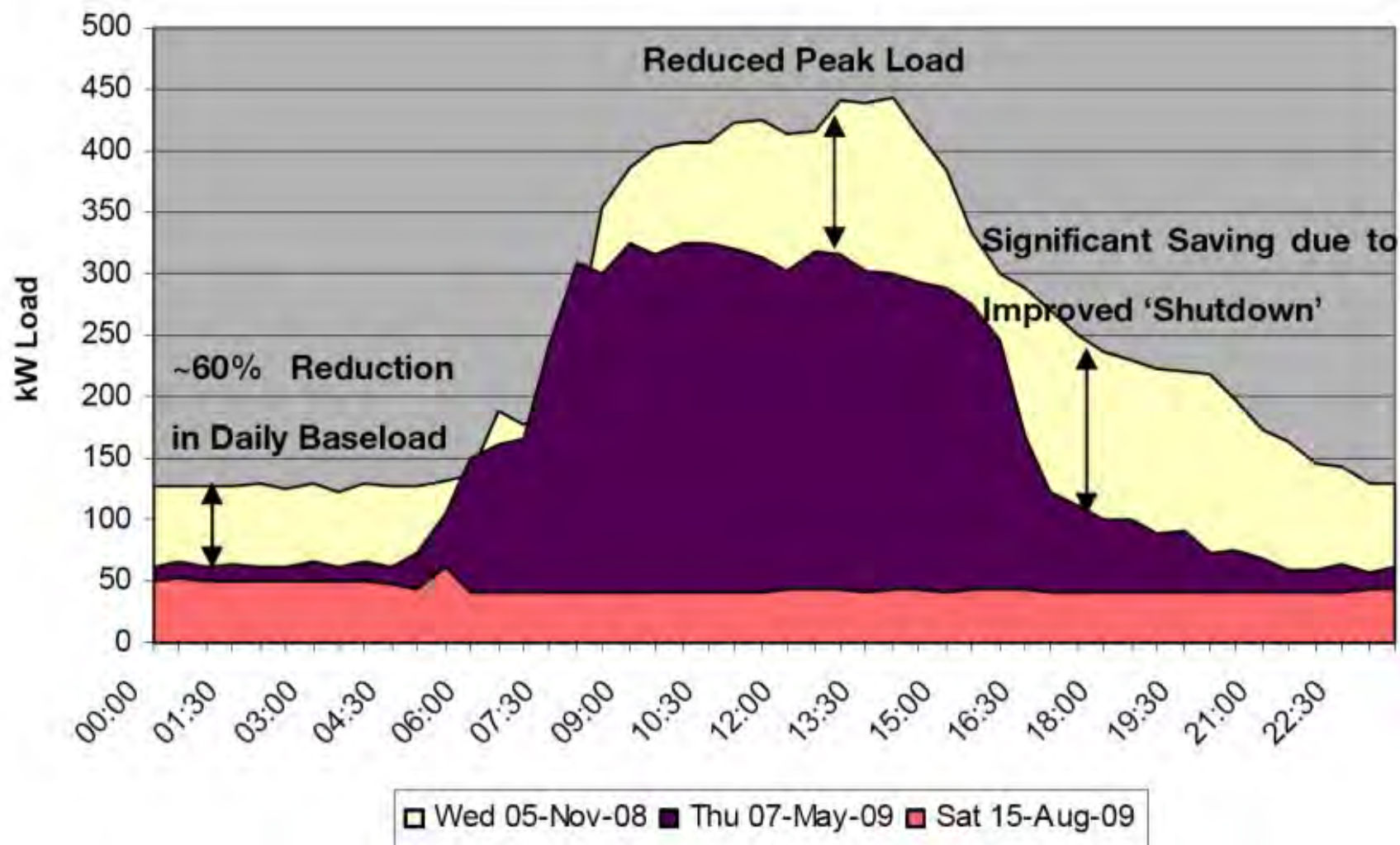


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Soft Landings Stage 4 - Aftercare

Paid for itself in a new secondary school



*Saving over € 60,000 p.a. in electricity bills: **avoiding default to ON** ... and occupant satisfaction can improve too!*

Soft Landings:

Key findings from application 2009-2020

STAGE 1 – INCEPTION AND BRIEFING

Client leadership is key.
Champions need to be designated.

STAGE 2 – DESIGN AND CONSTRUCTION

A question of attitude – no additional costs.
Regular reality-checking is essential.
Clients must not drift off – too often they do.

STAGE 3 – PREPARATION FOR HANDOVER

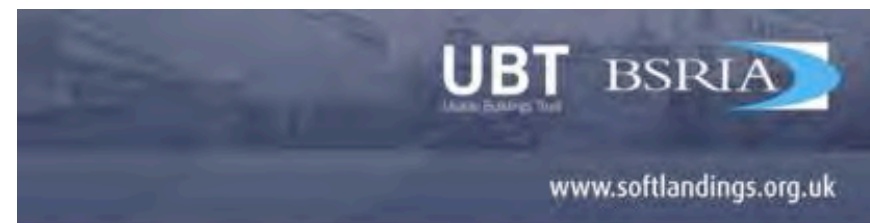
Dialogue with occupiers+operators needs more care.

STAGE 4 – INITIAL AFTERCARE *typically Year 1*

Difficult for contractors not to revert to type.
Helps to have a client budget for fixing things quickly.

STAGE 5 – LONGER TERM AFTERCARE *Years 2+3*

Needs some independent, disinterested input.
Needs funding outside the building contract.



MOVING ON



THE FUTURE: Moving from design for compliance to *Design for Performance*



OUR RESOURCES

OUR MEMBERS

Design for Performance

The Design for Performance Project is an industry initiative led by Verco and including BSRIA, Arup and the Usable Buildings Trust (UBT), and supported by the BBP, which aims to change the way we design new office developments in the UK. The project looks abroad to the hugely successful Australian NABERS Commitment Agreement and explores the applicability and opportunity of developing and testing such a framework in the UK.

The energy efficiency of new offices in the UK is subject to Building Regulations Part L and represented in market transactions by Energy Performance Certificates (EPCs). Developers, owners and occupiers of new and refurbished buildings might reasonably expect that these mechanisms will produce a building that is energy efficient in operation. However, both focus on design and technology that improves predicted building performance, not on achieving directly measureable improvements in performance in-use.

The consequence has been a *design-for-compliance* culture, and a disconnect between the regulatory framework and the influence it has on the energy use and associated carbon emissions it is supposed to be limiting – the so-called ‘Performance Gap’. Voluntary



DESIGN FOR PERFORMANCE

A new approach to delivering energy efficient offices in the UK

JUNE 2019

Design for Performance/ UK NABERS Commitment Agreements

- Clients sign up to providing a building that performs in accordance with its design intent. *This follows the proven success of NABERS in Australia, for energy use by landlord's services in rented offices.*
- Design and building team members are made aware that they share this commitment, *and that the design will be independently reviewed.*
- The exercise started in 2012, with a series of *Design for Performance* pilot projects on UK office developments completed in mid-2018.
- 12 major UK property companies are pioneering the scheme which was officially launched last week, *to eliminate performance gaps for landlord's services in new rented multi-tenanted office buildings.*
- 25 consultancy firms have signed up as delivery partners + *investing in capacity to provide the services required, e.g. realistic modelling.*
- The approach can be extended to more aspects of performance (*e.g. occupant satisfaction*) and to many more types of building.

Thank you Questions?



TIPPING POINT